

for supporting a slider, wherein the second section of the flexible member extends over the tip region of the load beam, and the slider mounting section is substantially same or wider than the tip region.

REMARKS

The present response is responsive to the Examiner's objections and rejections noted in the Office Action.

The specification and claims 1, 5, 9, 24, 27 and 28 have been amended. Claims 1-29 are now pending in this application, with claims 25 and 26 withdrawn.

1. Election

In connection with the Restriction requirement, Applicant affirms the prior provisional election without traverse to prosecute the invention of Group I, claims 1-24 and 27-29.

2. Specification

The Examiner objected to the disclosure because of an obvious typographical error on page 10, line 22. Appropriate correction has been made by the present amendment to the specification.

3. Claim Objection

The Examiner objected to claim 9 because of an obvious typographical error.

Appropriate correction has been made by the present amendment to claim 9.

4. Claim Rejections

The Examiner rejection claims 1, 7, 14-16, 24 and 29 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,424,498 to Patterson in view of U.S. Patent No. 5,982,584 to Bennin. The Examiner rejection claim 1 under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,151,197 to Larson in view of Bennin. The Examiner rejected claims 2-6, 8 and 27 under 35 USC 103(a) as being unpatentable over Larson in view of Bennin and further in view of U.S. Patent No. 6,388,843 to Takagi. The Examiner rejected claims 9-13, 21-23 and 28 under 35 USC 103(a) as being unpatentable over Larson in view of Bennin and further in view of U.S. Patent No. 5,986,853 to Simmons. Finally, the Examiner rejected claims 16-20 under 35 USC 103(a) as being unpatentable over Larson in view of Bennin and further in view of U.S. Patent No. 6,014,290 to Suprmaniam. These rejections are respectfully traversed below.

a. Rejection of Independent Claims 1, 24 and 29 Based on Patterson and Bennin

On the outset, Application notes that the present invention has a conception date that is earlier than the effective priority date of December 3, 1999 for Patterson. Applicant does not believe it is necessary to “swear behind” Patterson at this time, in view of the traversal on other grounds noted below. Applicant reserves the right to submit a declaration under 37 CFR 1.132 at a later date to “swear behind” Patterson.

As the Examiner correctly noted, Patterson is not directed to an integrated lead suspension, in which conductive traces are formed on a flexible member for electrical access to a magnetic head that is supported on the suspension assembly. Patterson is completely silent on the configurations and design issues relating to integrated lead suspension assembly, much less the limiter design configuration for an integrated lead suspension assembly.

Further with respect to claims 1 and 24 pending in the present application, Patterson is not directed to a suspension in which the flexible member and the load beam of the suspension assembly are configured with a limiter that is formed after the flexible member has been attached to the load beam. On the contrary, referring to Figs. 3 and 4 in Patterson, the sizes and relative positions of the mounting plates (208, 208) of the gimbals (206, 306), the catch holes (212, 312), and the cutouts (202, 302) for the hooks (204, 304), are such that there is no clearance between any aperture on the gimbals (206, 306) with respect to the hooks (204, 304) on the load beams (200, 300), “such that the limiter is free to be bent from the first position to the second position and to extend through the aperture after the flexure assembly has been attached to the load beam”, as required by independent claims 1 and 24.

Prior art limiters of integrated suspension assemblies had to be pre-bent prior to assembling the flexure assembly to the load beam. The pre-bending has to be done on a component level before assembly. Such pre-bent structure creates additional challenges in handling and assembly of the parts. It is difficult to assemble separate components with a bent structure given the relatively small size of the flexure assembly and load beam, and the tight clearances and tolerances that are available to work with. Any misalignment during assembly of the flexure assembly and the load beam could cause unwanted interferences between the gimbals

and the limiter, which could affect the fly height of the supported slider even in normal operations.

The present invention overcomes the prior art deficiencies. With the limiter configuration of the present invention, such as the embodiment shown in Figs. 4, 5 and 6, the flexure assembly 22 and the load beam 14 are first attached without having to bend to form a vertical limiter extending from the load beam 14. The flexure assembly 22 and the load beam 14 are kept generally flat (see Figs. 2 and 4) until after the flexure assembly 22 is attached to the load beam, when bending of the limiter 50 is undertaken to position the limiter 50 in a functional manner with respect to the hook 60.

Bennin does not make up for the deficiencies of Patterson. Bennin does not disclose any suspension limiter, much less the inventive limiter configuration offered by the flexure assembly and the load beam of the present invention. Accordingly, even if Bennin may somehow be combined with Patterson, the combination does not result in the present invention defined in independent claims 1 and 24.

Accordingly, independent claims 1 and 24, and all the claims dependent therefrom, are patentable over Patterson and Bennin.

With respect to independent claim 29, Applicant notes that there is no motivation or incentive to combine the teachings of Patterson and Bennin in the first place. Patterson is not directed to an integrated lead suspension assembly. Bennin on the other hand is directed to an integrated suspension assembly. Applicant respectfully submits that integrated suspension assembly has unique design considerations, some of which are discussed in Bennin. There is no teaching or suggestion (expressed or implied) if and how Patterson could be modified with the Bennin integrated lead suspension assemblies, while maintaining the limiter designs Patterson

propose for its non-integrated lead suspension assemblies. Such modification is only possible with impermissible hindsight reconstructions, made possible only by the disclosure of the present invention.

b. Rejection of Independent Claim 1 based on Larson and Bennin

As the Examiner correctly noted, Larson is not directed to an integrated lead suspension, in which conductive traces are formed on a flexible member for electrical access to the magnetic head that is supported on the suspension assembly. Larson is completely silent on the configurations and design issues relating to integrated lead suspension assembly, much less the limiter design configuration for an integrated lead suspension assembly.

Larson discloses the deployment of limiters 360 that act on the tabs 358 on the sides of the flexures 354, on either side of the slider 400. In contrast, claim 1 has been amended to recite that the slider mounting section extends into the aperture through which the limiter extends, and that the end of the slider mounting section interacts with the limiter.

Applicant submits that the side rails of the flexure are some of the most sensitive part of the flexure/gimbals. They are therefore not the best places to rely on for limiter interactions. The interactions of the side rails of the flexure with the limiters could easily damage the gimbals of the flexure, as to adversely affect the flexure/gimbal performance. In the present invention defined in claim 1 as amended, the limiter does not directly interact with the flexure on the sides of the slider, but instead interacts with the end of the slider mounting section that extends into the aperture. Referring to the embodiment shown in Fig. 4 of the present application, the slider mounting section is along a longitudinal axis of the suspension assembly.

Bennin does not make up for the deficiencies of Larson. Bennin does not disclose any suspension limiter, much less the inventive limiter configuration offered by the flexure assembly and the load beam of the present invention. Accordingly, even if Bennin may somehow be combined with Larson, the combination does not result in the present invention defined in independent claim 1.

Applicant notes that there is no motivation or incentive to combine the teachings of Larson and Bennin in the first place. Larson is not directed to an integrated lead suspension assembly. Bennin on the other hand is directed to an integrated suspension assembly. Applicant respectfully submits that integrated suspension assembly has unique design considerations, some of which are discussed in Bennin. There is no teaching or suggestion (expressed or implied) if and how Larson could be modified with the Bennin integrated lead suspension assemblies, while maintaining the limiter designs Larson propose for its non-integrated lead suspension assemblies. Such modification is only possible with impermissible hindsight reconstructions, made possible only by the disclosure of the present invention.

Accordingly, independent claim 1, and all the claims dependent therefrom, are patentable over Larson in view of Bennin.

c. Rejection of Claims Based on Larson in view of Bennin and Takagi

Claims 2-6, 8 and 27 have been rejected based on Larson in view of Bennin and Takagi.

With respect to claims 2-6 and 8, they are dependent from claim 1. In view of the traversal of the rejection of claim 1 above, these dependent claims should therefore be patentable over Larson and Bennin, and further in view of Takagi.

With respect to claim 27 as amended, similar to claim 1, Larson and Bennin in combination do not disclose a slider mounting section that extends into the aperture through which a limiter extends, wherein the end of the slider mounting section interacts with the limiter. Takagi does not make up for the deficiencies of Larson and Bennin. Like Bennin, Takagi is also directed to a limiter configuration in which limiters are deployed on the sides of the slider support. Accordingly, even if Takagi can somehow be combined with Larson and Bennin, the combination does not result in the present invention defined in claim 27.

d. Rejection Based on Larson in view of Bennin and Simmons

Claims 9-13, 21-23 and 28 have been rejected based on Larson in view of Bennin and Simmons.

With respect to claims 9-13 and 21-23, they are dependent from claim 1. In view of the traversal of the rejection of claim 1 above, these dependent claims should therefore be patentable over Larson and Bennin, and further in view of Simmons.

With respect to claim 28 as amended, similar to claim 1, Larson and Bennin in combination do not disclose a slider mounting section that extends into the aperture through which a limiter extends, wherein the end of the slider mounting section interacts with the limiter. Simmons does not make up for the deficiencies of Larson and Bennin. Like Bennin, Simmons is also directed to a limiter configuration in which limiters are deployed on the sides of the slider support. Accordingly, even if Simmons can somehow be combined with Larson and Bennin, the combination does not result in the present invention defined in claim 27.

e. Rejection Based on Larson in view of Bennin and Supramaniam

Claims 16-20 have been rejected based on Larson in view of Bennin and Supramaniam.

Claims 16-20 are dependent from claim 1. In view of the traversal of the rejection of claim 1 above, these dependent claims should therefore be patentable over Larson and Bennin, and further in view of Supramaniam.

CONCLUSION

In view of all the foregoing, Applicant submits that the claims pending in this application are patentable over the references of record and are in condition for allowance. Such action at an early date is earnestly solicited. **The Examiner is invited to call the undersigned representative to discuss any outstanding issues that may not have been adequately addressed in this response.**

Respectfully submitted,



Wen Liu
Registration No. 32,822

Dated: September 8, 2003

LIU & LIU
811 W. Seventh Street; Suite 1100
Los Angeles, California 90017
Telephone: (213) 830-5743
Facsimile: (213) 830-5741